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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,742	11/24/2003	Lawrence W. Yonge III	04838-077001	2741

26161 7590 01/14/2008
FISH & RICHARDSON PC
P.O. BOX 1022
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EXAMINER	
PATEL, CHIRAG R	

ART UNIT	PAPER NUMBER
2141	

MAIL DATE	DELIVERY MODE
01/14/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/720,742	YONGE ET AL.	
	Examiner	Art Unit	
	Chirag R. Patel	2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-68* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-68* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Arguments

Applicant's arguments, see pages 1-4, filed December 17, 2007, with respect to the rejection(s) of claim(s) 1-68 under 35 USC § 102 and 35 USC § 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Zegelin (US 2005/0089062).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 12, 57-60, and 65-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yi et al. (US 2002/0001314) in view of Zegelin (US 2005/0089062)

As per claims 1 and 57, Yi et al. discloses a method of operating in a network in which a plurality of stations communicate over a shared medium, comprising

providing a physical layer for handling physical communication over the shared medium; ([0025], Figure 4)

providing a high level layer that receives data from the station and supplies high level data units for transmission over the medium; ([0025], Figure 4)

providing a MAC layer that receives the high level data units from the high level layer and supplies low level data units to the physical layer; ([0025], Figure 4)

at the MAC layer, encapsulating content from a plurality of the high level data units into a stream of sub-frames; ([0014]; "a method of generating PDUs in a radio link control layer includes producing a payload unit by segmenting and/or concatenating one or more service data units received from a higher layer, generating a first PDU which includes a sequence number corresponding to the payload unit and a second PDU which includes the payload unit, and transmitting the first and second PDUs to a lower layer , [0029] lines 3-4)

Yi et al. fails to disclose dividing the encapsulated stream into a plurality of pieces with each piece capable of being independently retransmitted; supplying low level data units, at least some of the low level data units each containing one or more of the plurality of pieces into which the encapsulated stream was divided, and at least some of the low level data units containing boundary demarcation information indicating boundaries between the sub-frames in the stream. Zegelin discloses dividing the encapsulated stream into a plurality of pieces with each piece capable of being independently retransmitted; supplying low level data units, at least some of the low level data units each containing one or more of the plurality of pieces into which the encapsulated stream was divided, and at least some of the low level data units containing boundary demarcation information indicating boundaries between the sub-frames in the stream. ([0010]; Since the physical layer merely accepts and transmits a stream of bits without any regard to meaning of structure, it is up to the data link layer to create and recognize frame boundaries; [0051]) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose dividing the

encapsulated stream into a plurality of pieces with each piece capable of being independently retransmitted; supplying low level data units, at least some of the low level data units each containing one or more of the plurality of pieces into which the encapsulated stream was divided, and at least some of the low level data units containing boundary demarcation information indicating boundaries between the sub-frames in the stream. ([0010]; Since the physical layer merely accepts and transmits a stream of bits without any regard to meaning of structure, it is up to the data link layer to create and recognize frame boundaries in the disclosure of Yi et al. The motivation for doing do would have been to ensure that the data was not corrupted in transit and to reduce the need for retransmission in many cases and thus improves overall wireless network performance. ([0051])

As per claim 2, Yi et al. / Zegelin discloses the method of claim 1, and Yi et al. discloses wherein at least some information common to the encapsulated high level data units is not repeated for each high level data unit encapsulated in the stream. ([0031]; dividing the RLC PDU in a split mode and separately transmitting the part including the SN in a different channel.)

As per claim 3, Yi et al. / Zegelin discloses the method of claim 2, and Yi et al. wherein the information common to the encapsulated high level data units comprises destination and source addresses. ([0026] lines 13-23) Destination and source

address are inherent to the PDU in order to send the PDU to the destination and send an acknowledgement signal to an originating system.

As per claim 12, Yi et al. / Zegelin discloses the method of claim 1and Yi et al. discloses wherein some of the pieces making up a low-level data unit constitute retransmitted pieces that failed to be correctly transmitted in an earlier attempt. ([0031], inherent to APQ, (hybrid automatic repeat request)

As per claim 58, Yi et al. / Zegelin discloses the method of claim 57, and Yi et al. disclose wherein a plurality of the plurality of pieces each include a same number of the sub-blocks. ([0030]; The SN PDU contains a SN and E if the RLC is set to an unacknowledged mode and further contains a D/C, P, and HE field if it is set to an acknowledged mode.)

As per claim 59, Yi et al. / Zegelin discloses the method of claim 59 and Yi et al. disclose wherein an amount of padding in a piece is selected based on the number of sub-blocks in the piece and the size of the pieces. ([0030]; The LI+PU PDU has a PAD field in order to maintain its size since the number of the LI and the length of data can vary.)

As per claim 60, Yi et al. / Zegelin discloses the method of claim 59, and Yi et al. disclose wherein an amount of padding in a piece is selected based on the number of

sub-blocks in the piece and the size of the pieces. ([0030])

As per claim 65, Yi et al. / Zegelin discloses the method of claim 1. Yi et al. fails to disclose wherein the boundary demarcation information for a given low level data unit comprises information that indicates whether a boundary between high level data units exists within the low level data unit. Zegelin discloses wherein the boundary demarcation information for a given low level data unit comprises information that indicates whether a boundary between high level data units exists within the low level data unit. ([0051]) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose wherein the boundary demarcation information for a given low level data unit comprises information that indicates whether a boundary between high level data units exists within the low level data unit in the disclosure of Zi et al. The motivation for doing do would have been to ensure that the data was not corrupted in transit and to reduce the need for retransmission in many cases and thus improves overall wireless network performance. ([0051])

As per claim 66, Yi et al. / Zegelin discloses the method of claim 65. Yi et al. fails to disclose wherein, if such boundary does exist within the low level data unit, boundary demarcation information further comprises information that indicates where the boundary occurs within the low level data unit. Zegelin discloses disclose wherein, if such boundary does exist within the low level data unit, boundary demarcation

information further comprises information that indicates where the boundary occurs within the low level data unit. ([0010],[0051]) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose if such boundary does exist within the low level data unit, boundary demarcation information further comprises information that indicates where the boundary occurs within the low level data unit in the disclosure of Yi et al. The motivation for doing do would have been to ensure that the data was not corrupted in transit and to reduce the need for retransmission in many cases and thus improves overall wireless network performance. ([0051])

As per claim 67, Yi et al. / Zegelin disclose the method of claim 66. Yi et al. fails to disclose wherein the information that indicates whether a boundary between high level data units exists within the low level data unit comprises a field having a value that indicates which piece in the low level data unit includes the boundary, or having a value that indicates that no boundary exists within the low level data unit. Zegelin discloses wherein the information that indicates whether a boundary between high level data units exists within the low level data unit comprises a field having a value that indicates which piece in the low level data unit includes the boundary, or having a value that indicates that no boundary exists within the low level data unit. ([0010]) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose wherein the information that indicates whether a boundary between high level data units exists within the low level data unit comprises a field having a value that indicates which

piece in the low level data unit includes the boundary, or having a value that indicates that no boundary exists within the low level data unit in the disclosure of Yi et al. The motivation for doing do would have been to ensure that the data was not corrupted in transit and to reduce the need for retransmission in many cases and thus improves overall wireless network performance. ([0051])

Claims 4-8, 17-19, 28-36, 44-46, and 61-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yi et al. –hereinafter Yi (US 2002/0001314) / Zegelin (US 2005/0089062) further in view of Rosengard et al. – hereinafter Rosengard (US 2005/0063402).

As per claims 4 and 61, Yi /Zegelin discloses the method of claim 2, and Yi discloses wherein the high level data units each comprise a payload. ([0026]); "RLC SDUs received from a higher layer" is interpreted as the payloads) Yi fails to disclose forming the stream comprising the payloads from a succession of high level data units. Rosengard discloses forming the stream comprising the payloads from a succession of high level data units. ([0005]) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to forming the stream comprising the payloads from a succession of high level data units in the disclosure of Yi. The motivation for doing do would have been so that the number of packets can adaptively be adjusted according to amount of data in the queue, the delay requirements of packets, and the network conditions. ([0005])

As per claims 5 and 62, Yi/ Zegelin /Rosengard discloses the method of claim 4, and Yi discloses wherein the stream comprises a succession of sub-frames, each sub-frame comprising a header and a plurality of the payloads. ([0026], the "RLC SDUs received from a higher layer are segmented into a appropriate size set by the radio bearer and/or concatenated to form a RLC payload unit (RLC PU)" The RLC PU is interpreted as sub-frames)

As per claims 6 and 63, Yi / Zegelin /Rosengard discloses the method of claim 5. Yi fails to discloses wherein each sub-frame is divided into the plurality of pieces capable of being independently retransmitted. Zegelin discloses wherein each sub-frame is divided into the plurality of pieces capable of being independently retransmitted. ([0010]) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose wherein each sub-frame is divided into the plurality of pieces capable of being independently retransmitted in the disclosure of Yi. The motivation for doing do would have been to ensure that the data was not corrupted in transit and to reduce the need for retransmission in many cases and thus improves overall wireless network performance. ([0051])

As per claims 7 and 64, Yi/Zegelin / Rosengard discloses the method of claim 6. Yi fails to disclose wherein division of a sub-frame into the plurality of pieces comprises dividing the sub-frame into a plurality of sub-blocks, and forming at least some pieces

from a plurality of sub-blocks. Zegelin discloses wherein division of a sub-frame into the plurality of pieces comprises dividing the sub-frame into a plurality of sub-blocks, and forming at least some pieces from a plurality of sub-blocks. ([0051]) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose wherein division of a sub-frame into the plurality of pieces comprises dividing the sub-frame into a plurality of sub-blocks, and forming at least some pieces from a plurality of sub-blocks in the disclosure of Yi. The motivation for doing do would have been to ensure that the data was not corrupted in transit and to reduce the need for retransmission in many cases and thus improves overall wireless network performance. ([0051])

As per claim 8, Yi/ Zegelin / Rosengard discloses the method of claim 7, and Yi discloses wherein each piece constitutes a segment that is transmitted as a physical layer block. ([0026],Claim 1; generating a first PDU which includes a sequence number corresponding to said payload unit and a second PDU which includes said payload unit; and (c) transmitting said first and second PDUs to a lower layer.)

As per claim 17, Yi/Zegelin/ Rosengard discloses the method of claim 5, and Yi discloses further comprising an integrity check value associated with each sub-frame or with a plurality of sub-frames. ([0029] lines 15-20; CRC (Cyclic Redundancy Check)

As per claims 18 and 31, Yi/Zegelin/ Rosengard discloses the method of claim 5, and Yi discloses wherein each of the plurality of payloads in a sub-frame have identical length. ([0027]; SN PDU has a fixed length (one or two octets))

As per claim 19, Yi/ Zegelin/ Rosengard discloses the method of claim 5, and Yi discloses wherein each sub-frame further comprises MAC management information. ([0029], Figure 4)

As per claim 28, Yi/Zegelin/ Rosengard discloses the method of claim 5, and Yi discloses wherein the stream is divided into a plurality of sub-blocks, wherein a plurality of sub-blocks are grouped to form a segment, with a segment crossing sub-frame boundaries in the stream, wherein a segment constitutes one of the pieces. ([0026])

As per claim 29, Yi/ Zegelin/ Rosengard discloses the method of claim 28, and Yi discloses wherein each sub-block is shorter than a sub-frame. ([0026], Claim 1)

As per claim 30, Yi/Zegelin/ Rosengard discloses the method of claim 8 or 28, and Yi discloses wherein at least some segments contain a number of sub-blocks corresponding to one or more sub-frames including at least one sub-frame whose associated sub-blocks comprise less than the whole sub-frame. ([0026], [0029], Claim 1)

As per claim 32, Yi / Zegelin/ Rosengard discloses the method of claim 28, and Yi discloses wherein the sub-blocks have an associated sequential numbering adapted for use at the receiving station for re-establishing the correct sequential order of the sub-blocks. ([0026], sequence number)

As per claim 33, Yi / Zegelin/ Rosengard discloses the method of claim 32 and Yi discloses wherein the sub-blocks have a predetermined size, which combined with the associated sequential numbering, eliminates the need for buffer reordering when out of order segments are received; ([0026], sequence number, [0027]; SN PDU has a fixed length (one or two octets))

As per claim 34, Yi/ Zegelin / Rosengard discloses the method of claim 33, and Yi discloses wherein the sub-blocks are of equal size. ([0030], Figures 5 and 6)

As per claim 35, Yi/Zegelin / Rosengard discloses the method of claim 8 or 28, and Yi discloses further comprising, for at least some of the low level data units, forming the low level data unit from a plurality of segments. ([0026], [0029], Figure 4)

As per claim 36, Yi/ Zegelin / Rosengard discloses the method of claim 35, and Yi discloses wherein each segment in the low level data unit forms the body of a separate block transmitted by the physical layer. ([0026], [0029], Figure 4)

As per claim 44, Yi/ Zegelin / Rosengard discloses the method of claim 36, and Yi discloses wherein most of the blocks are identical in length. ([0027])

As per claim 45, Yi/ Zegelin / Rosengard discloses the method of claim 44, and Yi discloses wherein the initial and final block of a low level data unit can be of a different length than the remaining blocks. ([0030]; The LI+PU PDU has a PAD field in order to maintain its size since the number of the LI and the length of data can vary.)

As per claim 46, Yi/ Zegelin / Rosengard discloses the method of claim 35 and Yi discloses wherein information common to the plurality of segments forming the low level data unit is transmitted in a header for the low level data unit. ([0029], Figure 4)

Claims 9-11, 49-56 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yi et al. – hereinafter Yi (US 2002/0001314) / Zegelin (US 2005/0089062) further in view of Rakib et al. –hereinafter Rakib (US 2002/0015423)

As per claims 9 and 55, Yi / Zegelin discloses the method of claim 1. Yi fails to discloses ARQ, however fails to disclose recovering one or more lost pieces at the destination without having to retransmit the lost pieces. Rakib discloses parity pieces derived from other pieces and capable of being used at a destination to recover one or more lost pieces at the destination without having to retransmit the lost pieces. ([0386])

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose recovering one or more lost pieces at the destination without having to retransmit the lost pieces in the disclosure of Yi. The motivation for doing do would have been to reduce the error rate or increase the number of payload bits without increasing the symbol rate and bandwidth consumed. ([0281])

As per claim 10, Yi / Zegelin / Rakib discloses the method of claim 9 wherein each piece is transmitted as a physical layer block, and Yi discloses the parity pieces are also transmitted as parity physical layer blocks. ([0029])

As per claim 11, Yi/ Zegelin / Rakib discloses the method of claim 10 wherein the physical layer blocks are encoded. ([0029]) Yi fails to disclose forward error correction. Rakib discloses forward error correction. ([0031]) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose forward error correction in the disclosure of Yi. The motivation for doing do would have been to effectively manage the noise using conventional error detection and correction bits. ([0027])

As per claims 49, Yi/ Zegelin discloses the same limitations as recited in claim 1. However, Yi fails to disclose adaptively escalating the robustness of transmission of the low level data units depending on the frequency of transmission errors. Rakib discloses adaptively escalating the robustness of transmission of the low level data units

depending on the frequency of transmission errors. ([0381]) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose adaptively escalating the robustness of transmission of the low level data units depending on the frequency of transmission errors. The motivation for doing do would have been to reduce noise power ([0381])

As per claim 50, Yi/ Zegelin / Rakib disclose the method of claim 49. Yi fails to disclose incorporating forward error correction and adaptive varying forward error corrections. Rakib discloses wherein the method further comprises the method further comprises incorporating forward-error correction information into the transmitted stream of low level data units. ([0031]) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose forward error correction in the disclosure of Yi. The motivation for doing do would have been to effectively manage the noise using conventional error detection and correction bits. The discussion of adaptively varying forward error correction is included in claim 49 above, from which this claim depends on.

As per claim 51, Yi / Zegelin / Rakib discloses the method of claim 50. Yi fails to discloses wherein the level of forward error correction used is different for different blocks. Rakib discloses wherein the level of forward error correction used is different for different blocks. ([0381]) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose wherein the level of forward

error correction used is different for different blocks in the disclosure of Yi. The motivation for doing do would have been to reduce noise power ([0381])

As per claim 52, Yi / Zegelin /Rakib disclose the method of claim 49. Yi fails to disclose wherein decisions on adaptively escalating are made at transmitting station. Rakib discloses wherein decisions on adaptively escalating are made at a transmitting station. ([0016], a central unit transmitter with any encoder to receive downstream data, encode it and drive any type of digital passband modulator with the encoder receiving a master clock signal from a master clock oscillator and the modulator receiving a master carrier oscillator; ([0381]), fallback mode is implemented by a mode control signal on line 530 in FIG. 32 to the encoder, the encoder is interpreted as the transmitter) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to decisions on adaptively escalating are made at a transmitting station in the disclosure of Yi. The motivation for doing do would have been to reduce the amount of payload in each symbol and add more redundancy. ([0381])

As per claim 53, Yi / Zegelin / Rakib disclose the method of claim 49, and Yi fails to disclose wherein each of the low level data unit contains a plurality of the pieces. Zegelin discloses wherein each of the low level data unit contains a plurality of the pieces. ([0051]) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose wherein each of the low level data unit contains a plurality of the pieces in the disclosure of Yi. The motivation for doing do

would have been to ensure that the data was not corrupted in transit and to reduce the need for retransmission in many cases and thus improves overall wireless network performance. ([0051])

As per claim 54, Yi / Zegelin/ Rakib disclose the method of claim 52, and Yi discloses wherein the forward error correction information comprises information associated with the pieces for use at a destination for recovering a piece that is received with errors. ([0029] lines 15-20; CRC (Cyclic Redundancy Check)

As per claim 56, Yi / Zegelin / Rakib disclose the method of claim 55, and Yi discloses wherein each piece is transmitted as a physical layer block, and the parity pieces are also transmitted as parity physical layer blocks. ([0029] lines 15-20; CRC (Cyclic Redundancy Check)

As per claim 68, Yi /Zegelin discloses the method of claim 67. Yi fails to disclose an offset indicating a relative position of the boundary within the piece including the boundary. Rakib discloses wherein the information that indicates where the boundary occurs within the low level data unit comprises an offset indicating a relative position of the boundary within the piece including the boundary. ([0194]) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose an offset in the disclosure of Yi. The motivation for doing do would have been to achieve frame synchronization. ([0615])

Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yi (US 2002/0001314) / Zegelin (US 2005/0089062) / Rosengard (US 2005/0063402) further in view of Gibson et al. – hereinafter Gibson (US 6,445,717)

As per claim 14, Yi/ Zegelin / Rosengard discloses the method of claim 5. Yi fails to disclose delivery time stamp. Gibson discloses wherein each sub-frame further comprises a delivery time stamp associated with at least some payloads. (Col 6 line 54 – Col 7 line 5) At the time of invention, it would have been obvious to a person of ordinary skill in the art to use time stamp in the disclosure of Yi. The motivation for doing so would have been to calculate a round trip time. (Col 6 line 54 – Col 7 line 5)

As per claim 15, Yi/ Zegelin / Rosengard discloses the method of claim 5. Yi fails to disclose wherein clock information characterizing the time setting of a clock in a transmitting station is transmitted to a receiving station within a header of the low level data units. Gibson discloses the clock information is used by the receiving station along with the delivery time stamps to establish the time at which payloads are delivered. (Col 6 line 54 – Col 7 line 5) At the time of invention, it would have been obvious to a person of ordinary skill in the art to disclose clock information in the disclosure of Yi. The motivation for doing so would have been to detect packet loss if expected packets don't arrive in the allowed time. (Col 9 lines 1-23)

As per claim 16, Yi/ Zegelin / Rosengard disclose the method of claim 15. Yi fails to disclose the time a payload is delivered is set by time stamp. Gibson discloses wherein the time at which a payload is delivered is set to be substantially the time specified by the time stamp based on information derived from the clock information. (Col 6 line 54 – Col 7 line 5. At the time of invention, it would have been obvious to a person of ordinary skill in the art to disclose the time a payload is delivered is set by time stamp in the disclosure of Yi. The motivation for doing so would have been to detect packet loss if expected packets don't arrive in the allowed time. (Col 9 lines 1-23)

Claim 20-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yi (US 2002/0001314) / Zegelin (US 2005/0089062) / Rosengard (US 2005/0063402) further in view of Del Prado Pavon et al. – hereinafter Del Prado Pavon (2004/0047351)

As per claims 20 and 21, Yi/ Zegelin / Rosengard discloses the method of claim 4, and Yi discloses wherein the MAC layer has the capability of transmitting data in a plurality of sessions, wherein a station to which data is transmitted is identified by a destination address and a station from which data is transmitted is identified by a source address, ([0026], [0029], Figure 4) Yi fails to disclose within a regularly-repeated contention free interval, and wherein the stream contains a queue of payloads for the same session, same source address, and same destination address. Rosengard discloses the stream as mentioned in the limitations of claim 4. Yi fails to disclose transmitting data in a contention-free interval. Lee discloses transmitting data in a

contention free interval. Del Prado Pavon discloses contention-free interval. ([0043]; CSMA/CA - Carrier Sense Multiple Access with Collision Avoidance) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose contention free interval in the disclosure of Yi. The motivation for doing do would have been to differentiate channel access to frames of different priorities as labeled by a higher layer ([0043])

As per claim 22, Yi/ Zegelin /Rosengard/ Del Prado Pavon discloses the method of claim 20 or 21, and Yi discloses wherein the MAC layer processes data transmitted in the sessions. ([0029]) The discussion for contention free channel access processing is disclosed in claims 20 and 21 above.

As per claim 23, Yi/ / Zegelin /Rosengard/ Del Prado Pavon discloses the method of claim 22. Yi fails to disclose time slots. Rosengard discloses wherein the sessions are transmitted within time slots of a regularly-repeated contention-free interval. ([0004] ;Each packet is associated with a delay requirement that reflects a deadline corresponding to real-time traffic of at least one of the stations. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose time slots in the disclosure of Yi. The motivation for doing do would have been so that the number of packets can adaptively be adjusted according to amount of data in the queue, the delay requirements of packets, and the network conditions. ([0005])

As per claim 24, Yi/ Zegelin /Rosengard/ Del Prado Pavon discloses the method of claim 20 or 21. Yi fails to disclose a stream identifier. Rosengard discloses stream identifier wherein a stream identifier is used to associate content of a queue with a particular session. ([0051],[0052]) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose a stream identifier in the disclosure of Yi. The motivation for doing do would have been to determine the number of packets that may be encapsulated to form a frame of a suitable size or calculate whether waiting for a next packet would lead to a violation of a delay requirement. ([0052])

As per claim 25, Yi/ Zegelin / Rosengard/Del Prado Pavon discloses the method of claim 24. Yi fails to disclose priority level. Del Prado Pavon discloses wherein the stream identifier is also used to associate content of a queue with a priority level for contention-based transmission over the medium. ([0043]) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose priority level in the disclosure of Yi. The motivation for doing do would have been to have multiple queues that work independently, in parallel, for different priorities. ([0043])

As per claims 26 and 27, Yi/ Zegelin /Rosengard/Del Prado Pavon discloses the method of claim 24. Yi fails to disclose a plurality of queues of payloads in the stream, each containing payloads having a unique combination of stream identifier, source address, destination address, and higher type of layer. Rosengard a plurality of queues

of payloads in the stream, each containing payloads having a unique combination of stream identifier, source address, destination address, and higher type of layer. ([0004], [0051-0052], [0063]) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose stream identifiers and a plurality of queues in the disclosure of Yi. The motivation for doing do would have been to form a frame of a suitable size or calculate whether waiting for a next packet would lead to a violation of a delay requirement. ([0051])

Claims 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yi (US 2002/0001314) / Zegelin (US 2005/0089062) / Rosengard (US 2005/0063402) further in view of Jiang et al. – hereinafter Jiang (US 6,765,885).

As per claim 37, Yi / Zegelin / Rosengard discloses the method of claim 35 and individual segments. Yi fails to disclose encryption. Jiang discloses wherein individual segments are individually encrypted. (Col 3 lines 58-67) At the time of invention, it would have been obvious to a person of ordinary skill in the art to use encryption in the disclosure of Yi et al. The motivation for doing so would have been to allow for security (Col 3 lines 58-67)

Claims 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yi (US 2002/0001314) / Zegelin (US 2005/0089062) / Rosengard (US 2005/0063402) / Jiang (US 6,765,885) further in view of Henson et al. – hereinafter Henson (US 2002/0131591)

As per claim 38, Yi/ Zegelin / Rosengard / Jiang discloses the method of claim 37. Yi fails to discloses encryption is carried in a header. Henson discloses encryption information common to a plurality of segments is carried in a header. [0108]. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use encryption in a header in the disclosure of Yi et al. The motivation would have been to prevent unauthorized user from accessing body of the message or the segments. ([0108])

As per claims 39 and 40, Yi/ Zegelin / Rosengard / Jiang discloses the method of claim 37. Yi fails to discloses wherein encryption information common to a plurality of segments is carried in a header. Henson et al. discloses wherein some encryption information is carried in a header and frame control of the low level data unit and in a header of the block. [0108] At the time of invention, it would have been obvious to a person of ordinary skill in the art to use encryption in a header and frame control in the disclosure of Yi. The motivation would have been to prevent unauthorized user from accessing body of the message or the segments. ([0108])

Claims 13, 41-43 and 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yi et al. – hereinafter Yi (US 2002/0001314) / Zegelin (US 2005/0089062) / Rosengard (US 2005/0063402) further in view of Rakib et al. – hereinafter Rakib (US 2002/0015423)

As per claim 13, Yi / Zegelin /Rosengard discloses the method of claim 12. Yi fails to disclose wherein at least some retransmitted pieces are transmitted with greater forward error correction. Rakib discloses wherein at least some retransmitted pieces are transmitted with greater forward error correction. ([0381]; fallback mode where more redundant bits are added to each 4-bit group and correspondingly less payload data in included in each 4 bit group) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to retransmit pieces are transmitted with greater forward error correction in the disclosure of Yi. The motivation for doing do would have been to reduce noise power ([0381])

As per claim 41, Yi/ Zegelin / Rosengard discloses the method of claim 36 and Yi fails to disclose forward error correction. Rakib discloses wherein each block separately undergoes forward error correction, and forward error correction bits for each block are transmitted in the low level data unit. ([0031]) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose forward error correction and each block separately undergoes forward error correctionin the disclosure of Yi. The motivation for doing do would have been to effectively manage the noise using conventional error detection and correction bits. ([0027])

As per claim 42, Yi/ Zegelin / Rosengard/Rakib discloses the method of claim 41.

Yi fails to discloses wherein the level of forward error correction used is different for different blocks. Rakib discloses wherein the level of forward error correction used is different for different blocks. ([0381]) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose wherein the level of forward error correction used is different for different blocks in the disclosure of Yi. The motivation for doing do would have been to reduce noise power ([0381])

As per claim 43, Yi/ Zegelin / Rosengard/Rakib discloses the method of claim 42. Yi fails to discloses wherein the level of forward error correction used provides greater error correction capability for selected blocks that are being retransmitted after failing to be correctly transmitted in an earlier attempt. Rakib discloses wherein the level of forward error correction used provides greater error correction capability for selected blocks that are being retransmitted after failing to be correctly transmitted in an earlier attempt. ([0381]) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose wherein the level of forward error correction used provides greater error correction capability for selected blocks that are being retransmitted after failing to be correctly transmitted in an earlier attempt in the disclosure of Yi. The motivation for doing do would have been to reduce noise power ([0381])

As per claim 47, Yi/ Zegelin / Rosengard/ Rakib discloses the method of claim 41 and Yi wherein the information common to the plurality of segments is transmitted only in the header. ([0029], Figure 4)

As per claim 48, Yi/ Zegelin / Rosengard/ Rakib discloses the method of claim 41 and Yi discloses wherein the low level data unit further comprises a frame control field. ([0007], Figure 3; data/control (D/C))

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag R Patel whose telephone number is (571)272-7966. The examiner can normally be reached on Monday to Friday from 7:30AM to 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia, can be reached on (571) 272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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